

Program 9 - Bulldog Extras

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Code: <https://github.com/abbyPitcairn/BullDog>

Task 1: Acknowledgement ✓

Task 2: Propose Changes to Bulldog

My proposal for a task to add to the Bulldog class would be a variable version of FifteenPlayer, which allows the user to input a 'limit' that may or may not be 15. This would allow students to demonstrate their knowledge of interfaces by expanding on the Player subclasses and expanding their GUI.

Instructions: implement a new Player type, VariablePlayer, that will mimic FifteenPlayer, but allow the user to input what value VariablePlayer plays until. This means you must define a new Player subclass, and add it as an option on your GUI.

Task 3: Implement Changes to Bulldog

Changes to PlayerListModel.java:

```
/**
 * Initializes players by prompting the user for names and player types.
 * Allows the user to select between different player types.
 */
protected static PlayerListModel initializePlayers() {
    PlayerListModel playerListModel = new PlayerListModel();
    int numPlayers = Integer.parseInt(JOptionPane.showInputDialog("Enter number of players (1-5):"));
    for (int i = 0; i < numPlayers; i++) {
        String name = JOptionPane.showInputDialog("Enter name for player " + (i + 1) + ":");
        String[] options = {"Human", "Random", "Variable", "Unique", "Wimp"};
        int choice = JOptionPane.showOptionDialog(null, "Choose player type for " + name + ":",
            "Player Type", JOptionPane.DEFAULT_OPTION,
            JOptionPane.INFORMATION_MESSAGE, null, options, options[0]);
        int limit = 0;
        if (choice == 2) {
            while (true) {
                String input = JOptionPane.showInputDialog(null, "Choose limit for " + name + ":",
                    "Limit", JOptionPane.QUESTION_MESSAGE);
                try {
                    limit = Integer.parseInt(input);
                    break;
                } catch (NumberFormatException e) {
                    JOptionPane.showMessageDialog(null, "Please enter a valid integer limit.");
                }
            }
        }
    }
}
```

```

    }
    switch (choice) {
        case 0 -> playerListModel.addPlayer(new HumanPlayer(name));
        case 1 -> playerListModel.addPlayer(new RandomPlayer(name));
        case 2 -> playerListModel.addPlayer(new VariablePlayer(name, limit));
        case 3 -> playerListModel.addPlayer(new UniquePlayer(name));
        case 4 -> playerListModel.addPlayer(new WimpPlayer(name));
        default -> playerListModel.addPlayer(new RandomPlayer(name));
    }
}
return playerListModel;
}

```

Changes to FifteenPlayer.java -> VariablePlayer.java:

```

/**
 * A player that stops rolling once their turn score reaches 15.
 *
 * @author Abigail Pitcairn and ChatGPT 4.0
 * @version April 30, 2025
 */
class VariablePlayer extends Player {

    private int limit;

    /**
     * Constructs a VariablePlayer with a given name and limit to play to.
     *
     * @param name The name of the player.
     * @param limit The limit the player will play until.
     */
    public VariablePlayer(String name, int limit) {
        super(name);
        this.limit = limit;
    }

    /**
     * Plays a turn where the player stops rolling when their score reaches or exceeds limit.
     *
     * @return true if the score's under limit, otherwise false.
     */
    @Override
    protected boolean continueTurn(int turnScore) {
        if (turnScore >= limit)
            return false;
        return true;
    }
}

```